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(54) ELECTROACOUSTIC INTEGRATED CIRCUIT AND ITS MANUFACTURE

(57) Abstract:

PURPOSE: To obtain a small, lightweight electroacoustic integrated circuit of high performance by directly sticking an electroacoustic element having excellent electroacoustic characteristics to a III-V compound semiconductor substrate provided with electronic elements.

CONSTITUTION: A surface acoustic wave resonator 2 composed of a single-crystal piezoelectric quartz substrate is directly stuck to a GaAs substrate 1 made of a III-V compound semiconductor. Then a transistor 3, variable capacitance diode chip 4, passive chip parts 5 such as capacitor, inductor and resistor, and the electrode 6 of the resonator 2 are formed on the substrate 1. The oscillation frequency of the resonator 2 can be changed when the capacitance of the chip 4 is changed by changing the voltage applied across the chip 4. The quartz substrate 2 is directly stuck to the substrate 1. Therefore, a very small voltage- controlled oscillator can be obtained when the integrally united substrates 1 and 2 are housed in a sealed container.

